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# The syntax of relative clauses in Croatian\*

**Abstract:** In this paper, I propose that Croatian relative clauses (RCs) introduced by the complementizer *što* ‘what/that’ do not form a homogeneous class with respect to their derivation: some are derived by movement, and some are derived by a non-movement strategy. Unless the relativized element is the subject, *što*-RCs normally require a resumptive pronoun to appear in the site of relativization. However, this requirement is removed under morphological case matching between the head of the RC and the resumptive pronoun: the resumptive pronoun may be omitted if the pronounced head of the RC, case-marked in the matrix clause, appears in the morpho-phonological form that it would have if it were case-marked by the embedded predicate. I argue that the absence of a resumptive pronoun in a *što*-RC indicates that the RC is derived by movement. I propose that the matching analysis of RCs (Bhatt 2002; Citko 2001; Hulsey and Sauerland 2006; Sauerland 1998, 2002), coupled with a version of the Inverse Case Filter (Bošković 1997, 2002; Martin 1999) and a particular view of inverse (case) attraction offers a natural explanation for why such *što*-RCs may receive a movement analysis only if the matching requirement is satisfied.

**Keywords:** Croatian, relative clauses, matching effect, resumption, Inverse case filter

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## 1 Introduction

In this paper, I propose that Croatian relative clauses (RCs) introduced by the complementizer *što* (‘what/that’) do not form a homogenous class with respect to their derivation: some are derived by movement, and some are derived by a non-movement strategy. In particular, I argue that in those *što*-RCs that contain an obligatory resumptive pronoun (RP), the relativized element does not undergo movement. On the other hand, those *što*-RCs that may surface with or without an

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RP are argued to be ambiguous between the *in situ* strategy (when the RP is present) and the movement strategy (when the RP is absent).

The argument for the syntactic ambiguity of Croatian *što*-RCs proceeds in two steps. First, in Section 2, I identify configurations in which an RP may be omitted from a *što*-RC. We will see that the site of relativization may be occupied by a gap if the pronounced head of the RC, which receives case in the matrix clause, has the form that it would have if it were case-marked by the embedded predicate. Importantly, the matrix and embedded predicates do not need to assign the same case (Mitrović 2008).<sup>1</sup> It is sufficient that the *morphological* realizations of the assigned cases are identical, i.e. an RP is optional under *morphological case matching* (MCM). Thus, the matching requirement in question seems to be a PF requirement. Next, in Section 3, I provide evidence that the absence of an RP in a *što*-RC indicates that the RC is derived by a movement strategy. The argument rests on the evidence from relativization of oblique objects, quirky subjects, and relativization out of extraction islands, all of which require an obligatory presence of an RP. The conclusion that emerges from the discussion is that the movement strategy in the derivation of *što*-RCs is subject to MCM. This is unexpected, given that movement of a constituent is normally not subject to PF requirements. In Section 4, I propose a solution to this puzzle. I argue that the matching analysis of RCs (Bhatt 2002; Citko 2001; Hulsey and Sauerland 2006; Sauerland 1998, 2002), coupled with a version of the Inverse Case Filter (Bošković 1997, 2002; Martin 1999) and a particular view of inverse (case) attraction provides a natural explanation for this phenomenon. Section 5 is the conclusion.

## 2 Croatian relative clauses

Croatian has two kinds of RCs: *wh*-RCs, introduced by a *wh*-operator *koji/-a/-e* ‘which’ and *što*-RCs, introduced by the complementizer *što* ‘what/that’. In *wh*-RCs, the site of the relativization is always a gap, regardless of what element in the modifying clause is relativized. This is illustrated in (1).

- (1) a. *čovjek koji* — *puši* *subject wh-RC*  
 man.NOM which.NOM smokes  
 ‘a/the man who smokes/is smoking’

<sup>1</sup> Throughout the paper, the term case-assignment is used rather than case-checking. As far as I can tell, this does not bear on the proposed analysis.

- b. *čovjek kojeg Jan vidi* \_\_\_ *object wh-RC*  
 man.NOM which.ACC Jan.NOM sees  
 ‘a/the man whom Jan sees/is looking at’
- c. *čovjek kojem Jan pokazuje put* \_\_\_ *put indirect object*  
 man.NOM which.DAT Jan.NOM shows way.ACC wh-RC  
 ‘a/the man to whom Jan shows/is showing the way’

On the other hand, *in što*-RCs, whether the site of relativization is occupied by a gap or by an RP depends on what element is relativized. If the relativized element is the subject, *što*-RCs are like *wh*-RCs in that they obligatorily feature a gap in the embedded subject position. This is shown in (2).

- (2) *čovjek što (\*on) puši* \_\_\_ *subject što-RC*  
 man.NOM that (\*he.NOM) smokes.PRES  
 ‘a/the man that smokes/is smoking’

However, if the relativized element is not a subject, then the RC surfaces with an RP. The RP takes the form of a pronominal clitic, and since clitics in Croatian are second position elements, the RP occupies the second position in the RC. If the RC contains no additional clitics, the RP immediately follows the complementizer. If the RC does contain additional clitics, then the entire clitic cluster follows the complementizer, and the RP is found in a designated position within the clitic cluster. This position depends on the case marking of the RP clitic.<sup>2</sup> Throughout the paper, I indicate with an underscore the original position of the relativized element. The data in (3) illustrate *što*-RCs with an obligatory RP.

- (3) a. *čovjek što \*(ga) Jan vidi* \_\_\_ *object što-RC*  
 man.NOM that \*(he.ACC) Jan sees.PRES  
 ‘a/the man that Jan sees’
- b. *čovjek što \*(mu) Jan pokazuje put* \_\_\_ *indirect object*  
 man.NOM that \*(he.DAT) Jan shows.PRES way.ACC *što-RC*  
 ‘a/the man that Jan is showing him the way’

The appearance of an RP in Croatian *što*-RCs<sup>3</sup> is in no respect exceptional. In many languages, RCs introduced by a complementizer involve optional resumption (Hebrew, Irish) or obligatory resumption (Palestinian Arabic). RCs in which

<sup>2</sup> The order of clitics in a clitic cluster is AUX < DAT < ACC.

<sup>3</sup> Throughout the paper, unless otherwise indicated, the term “*što*-RC” refers to a non-subject *što*-RC.

the relativization site is occupied by an RP are commonly analyzed as not involving movement (Borer 1984; Chomsky 1977; Lavine 2003; McCloskey 1990, 2002; Merchant 2004; Safir 1986; Shlonsky 1992). Instead, they are argued to involve an RP, externally merged within the RC, which is related to (bound by) a null operator, externally merged in [Spec CP]. The non-movement analysis of ‘resumptive RCs’ receives support from examples like (4), which shows that in languages like Hebrew, where RPs are optional, an RP is obligatory in syntactic islands – positions from which movement is not allowed.

- (4) *ha- ?iš še- ra?iti ?et [NP<sub>island</sub> ?iš- \*(o)] Hebrew*  
 the-man that-saw.1SG ACC wife- \*(his)  
 ‘the man whose wife I saw’  
 (Shlonsky 1992: 5)

In fact, even in English, a language which lacks true RPs, as argued Chao and Sells (1983) and Sells (1984), the site of relativization must be occupied by a pronominal element if relativization proceeds out of an island. This pronominal element, the above authors argue, is an intrusive pronoun, used only as a last resort repair of an island violation.

- (5) the man that John wondered [<sub>wh-island</sub> whether Mary saw \*(him)]  
 (Boeckx 2003: 6)

I assume that the non-movement analysis of RCs that involve RPs is correct – I take an RP in the position of relativization to be an indication of the non-movement analysis of the RC in question. Based on this, the conclusion emerges that in Croatian, *što*-RCs do not involve movement. However, in the next subsection, we will see that an RP in a *što*-RC is not always obligatory. In some cases, the site of relativization may be occupied by a gap.

## 2.1 Optional RPs in *što*-RCs

Consider the following examples, both of which contain a *što*-RC.<sup>4</sup>

<sup>4</sup> The subscripted +acc on the embedded verb *vidio* ‘seen’ in (6) indicates that the v<sup>0</sup> that c-commands the verb assigns accusative case to the RP. The matrix verb *voli* ‘loves’ is subscripted by +nom for convenience, but it actually indicates that the head noun *čovjek* ‘man’ is assigned nominative by the matrix T. Throughout the article I will follow the practice of subscripting the verbs in both matrix and embedded clauses by the abbreviation of the case that the head noun and RP respectively receive, even though in cases when one of the two is the subject it is not the verb which case marks it, but rather the higher functional structure.

(6) *Čovjek [što sam \*(ga) vidio<sub>+acc</sub> \_\_\_ ] voli<sub>+nom</sub> Ivu.*  
 man.NOM [that Aux.1SG \*(him.ACC) seen<sub>+acc</sub> \_\_\_ ] loves<sub>+nom</sub> Iva.ACC  
 ‘The man that I saw loves Iva.’

(7) *Upoznao<sub>+acc</sub> sam čovjeka [što (ga) Iva*  
 met.1SG.<sub>+acc</sub> Aux.1SG man.ACC [that (him.ACC) Iva.NOM  
*obožava<sub>+acc</sub> \_\_\_.]*  
 adores<sub>+acc</sub> \_\_\_]  
 ‘I met the man that Iva adores.’

In (6), where the RP is obligatory, the head of the RC is the subject of the matrix clause, assigned nominative by the matrix T<sup>0</sup>, while the RP is the object of the embedded verb *vidio* ‘seen’, which marks the RP accusative. On the other hand, in (7), where the RP is optional, both the head of the RC and the RP are objects of their respective verbs, and both are case-marked accusative. Based on these two examples, then, the generalization emerges that an RP is optional if the case it bears matches the case born by the head of the RC. I will refer to this requirement as *Case Matching*.<sup>5</sup>

(8) *Case Matching (to be revised)*

In a *što*-RC, an RP may be omitted if it bears the same case as the head of the RC.

This generalization correctly captures the contrast between (6) and (7). However, it incorrectly predicts that an RP will be obligatory in (9) below. This example differs from (6) only in the gender of the head of the RC: while in (6) the head noun is masculine (*čovjek* ‘man’), in (9) it is neuter (*dijete* ‘child’). The two examples do not differ with respect to cases that are assigned to the head of the RC and the RP: in both the head noun bears nominative and the RP bears accusative. Importantly, however, while in (6) the RP is obligatory, in (9) it is optional.

(9) *Dijete [što sam (ga) vidio<sub>+acc</sub> \_\_\_ ] voli<sub>+nom</sub> Ivu.*  
 child.NOM/ACC [that Aux.1SG (him.ACC) seen<sub>+acc</sub> \_\_\_ ] loves<sub>+nom</sub> Iva.ACC  
 ‘The child that I saw loves Iva.’

The fact that in (9) the RP is not obligatory suggests that it is not *formal* identity of case assigned to the head noun on the one hand and the RP on the other that

<sup>5</sup> The matching requirement is commonly tied to the context of free relative clauses, and was first discussed in Grimshaw (1977).

makes the use of the RP optional. Rather, the contrast between (6) and (9) can be attributed to the fact that singular neuter nouns in Croatian (like *dijete* ‘child’) are syncretic between nominative and accusative, while singular masculine nouns denoting animate entities (like *čovjek* ‘man’) are not. Thus, in (9), if the head noun *dijete* ‘child’ were case-marked by the embedded predicate (which case-marks the RP), it would have received accusative, and would have the form which is *morphologically* identical to the nominative form that it actually has: *dijete*. This appears to be sufficient for the RP to be omitted. On the other hand, in (6), if the head noun *čovjek* ‘man’ were case-marked accusative by the embedded verb, it would have the form *čovjeka*. This form is not identical to the actual form *čovjek*, and so the presence of an RP is obligatory. The requirement that must be satisfied in order for an RP to be optional seems to be one that makes reference to *morphological* case. We will therefore rename the requirement in (8) to refer to it as the *Morphological Case Matching* (MCM). MCM is stated in (10).<sup>6</sup>

(10) *Morphological Case Matching*

In a *što*-RC, an RP may be omitted if the head of the RC bears the same morphological case that it would bear if it were case marked by the element that case-marks the RP.

The generalization in (10) correctly captures not only the contrast between (6) and (9), but also the fact that in (7), the RP is optional. In this example, if the head noun *čovjek* ‘man’ were case-marked by the embedded predicate, it would have the form *čovjeka*, which is morphologically identical to the form it actually has. Consequently, the RP may be omitted.

The observation that an RP in (Serbo-)Croatian *što*-RCs is sometimes optional is not a new one. However, in previous approaches, the optionality of RPs has been tied to the animacy or gender features of the head noun.<sup>7</sup> It has been claimed that an RP is obligatory with animate heads, while it is optional with inanimate heads (Browne 1986; Goodluck and Stojanović 1996; Kordić 1995). The data

<sup>6</sup> In Section 3, I argue that the omission of an RP indicates that the RC in question involves movement of the relativized element. We will see that the movement is only allowed under MCM. However, if the configuration independently disallows movement, then the RP cannot be omitted. Consequently, the generalization in (10) does not hold across-the-board. I thank a reviewer for bringing this to my attention.

<sup>7</sup> An exception is Mitrović (2008), where the optionality of an RP is also tied to case assignment, like in the present proposal. The difference between the two accounts is that for Mitrović, the presence versus absence of the RP does not reflect the difference in the derivation of a RC. Rather, she argues that inherent case must be spelled-out, while structural case must be checked, but may not be spelled-out. Taken together, these two conditions account for the distribution of RPs.

in (6) through (9) above indicate that, in fact, the appearance of an RP is independent of the animacy of the head noun. Bošković (2009) notes that “while the resumptive is optional with masculine and neuter objects, it is obligatory with [. . .] feminine objects.” (pg. 9) This claim is falsified by (11) and (12) below.

- (11) *Želja* [što sam \*(je) osjetio<sub>+acc</sub> \_\_\_] bila<sub>+nom</sub> je  
 desire.F.NOM [that Aux.1SG \*(her.ACC) felt<sub>+acc</sub> \_\_\_] been<sub>+nom</sub> Aux.3SG  
*jaka.*  
 strong.F.NOM  
 ‘The desire that I felt was strong.’

- (12) *Ljubav* [što sam (je) osjetio<sub>+acc</sub> \_\_\_] bila<sub>+nom</sub> je  
 love.F.NOM/ACC [that Aux.1SG (her.ACC) felt<sub>+acc</sub> \_\_\_] been<sub>+nom</sub> Aux.3SG  
*jaka.*  
 strong.F.NOM  
 ‘The love that I felt was strong.’

Both examples contain a *što*-RC, whose head is an inanimate feminine noun (*želja* ‘desire’ and *ljubav* ‘love’). In both sentences, the head noun, modified by the RC, is the subject of the matrix clause, case-marked nominative. The only difference between the two is the declension class of the two nouns: the noun *želja* ‘desire’ belongs to class II, while the noun *ljubav* ‘love’ belongs to class III (Mrazović and Vukadinović 1990). Nouns belonging to class II do not show syncretism between nominative and accusative (the accusative form of the noun *želja* ‘desire’ is *želju*). This renders the RP in (11) obligatory. By contrast, class III nouns have the same form in nominative and accusative, which makes the RP in (12) optional. It seems then that neither animacy nor gender of the head of the RC plays a role in whether an RP in a Croatian *što*-RC is obligatory or optional. Rather, the correct characterization of the variation has to take into account the morphological case matching between the head of the RC and the RP.

Our next task is to formally characterize the difference between the *što*-RCs with an RP and those without an RP. Recall from (1) above that Croatian *wh*-RCs always contain a gap in the site of relativization. *Što*-RCs without an RP share this property with *wh*-RCs. It is rather uncontroversial that the derivation of *wh*-RCs involves at least some movement, at the very least the movement of the *wh*-phrase to [Spec CP] of the RC. Given the parallelism that RP-less *što*-RCs exhibit with *wh*-RCs, the null hypothesis is that the relativized element in such *što*-RCs also undergoes movement. In what follows, I explore this hypothesis and argue that it is correct. In the next section, we will see arguments for the claim that the presence versus the absence of an RP in an object *što*-RC is indicative of

the different derivational history of such RCs: while RCs with an RP are derived by a non-movement strategy, those without an RP involve movement.

### 3 No RP = movement

If *što*-RCs that do not contain an RP are derived by movement, and the omission of an RP is allowed only under MCM, it follows that movement of the relativized element in such RCs is subject to MCM. Given that for the movement strategy to be sanctioned, the relevant identity relation that must hold between the head of the RC and the RP is the identity of the morpho-phonological form, MCM seems to be a PF requirement. Since movement is normally not subject to PF requirements, we should be sceptical about the claim that in *što*-RCs MCM constrains movement. For now, however, I will simply assume that this is correct. Before we return to this issue in Section 4, let us first convince ourselves that the absence of an RP in a *što*-RCs is indeed indicative of movement. This claim receives support from data that involve relativization out of syntactic islands, relativization of oblique objects, and somewhat surprisingly, relativization of quirky subjects in *što*-RCs. Below, we will examine each of these phenomena in turn.

#### 3.1 Island effects

Bošković (2009) reports that *što*-RCs are sensitive to islands. This is, however, not so for all speakers. For some, including myself, *što*-RCs do not show island-sensitivity. These speakers find the example in (13), which shows relativization from an adjunct island, well-formed.

- (13) *Ovo je čovjek [što Sanja plače [jer \*(ga) voli<sub>+acc</sub> \_\_.]] loves<sub>+acc</sub> \_\_]]*  
 this is man.NOM [that Sanja.NOM cries [because \*(him.ACC) loves<sub>+acc</sub> \_\_]]  
 ??/\*‘This is the man that Sanja is crying because she loves him.’

The RP in (13) is obligatory. This is not surprising since the MCM requirement is not met – the form of the head noun *čovjek* ‘man’ is different from what it would have been were the head noun case-marked by the embedded predicate (in which case it would have surfaced as *čovjek<sub>a</sub>*). Importantly, however, if relativization proceeds out of an island, an RP is obligatory even when the matching requirement is satisfied, as shown in (14).



- (14) *Vidim*<sub>+acc</sub> *čovjeka* [*što* *Sanja* *plače* [*jer* \*(*ga*)  
 see.1SG.<sub>+acc</sub> man.ACC [that Sanja.NOM cries [because \*(him.ACC)  
*mrzi*<sub>+acc</sub> \_\_\_]]  
 hates<sub>+acc</sub> \_\_\_]]  
 ??/\*‘I see the man that Sanja cries because she hates him.’

The fact that in (14) an RP is obligatory despite the satisfaction of the MCM is taken as evidence that even though MCM may sanction the movement operation in a *što*-RC, it can only do so in contexts in which movement is independently allowed. If the syntactic environment prevents movement, as is the case with islands, then the RC must be formed through a non-movement strategy, which requires the presence of an RP. This provides evidence that RP-less *što*-RCs in non-island environments involve movement. We will next look at the cases that involve relativization of oblique objects.

### 3.2 Oblique objects

Relativization of an oblique object in a *što*-RCs always requires the presence of an RP, regardless of MCM. This is shown by the examples below, both of which contain an oblique object: (15) contains a genitive object, and (16) an instrumental object. Importantly, the MCM requirement is satisfied in both.

- (15) *Sjećam*<sub>+gen</sub> *se* *psa* [*što* *si* \*(*ga*) *se*  
 recall.1SG.<sub>+gen</sub> REFL dog.GEN [that Aux.2SG \*(him.GEN) REFL  
*bojao*<sub>+gen</sub> \_\_\_]  
 feared<sub>+gen</sub> \_\_\_]  
 ‘I recall the dog that you used to fear.’

- (16) *Razočaran*<sub>+instr</sub> *sam* *studentom* [*što* *se* \*(*njime*)  
 disappointed<sub>+instr</sub> am student.INSTR [that REFL \*(him.INSTR)  
*ponosiš*<sub>+instr</sub> \_\_\_]  
 pride<sub>+instr</sub> \_\_\_]  
 ‘I am disappointed by the student that you are proud of.’

If I am correct in arguing that the presence of an RP indicates that the RC is derived through a non-movement strategy, then the RCs in (15) and (16) cannot be derived by movement. In what follows, we will see that oblique objects do not move in free relatives (FRs) either, even though relativization of non-oblique elements in a FR does involve movement.

### 3.2.1 Parallelism with free relatives

As argued by Gračanin-Yuksek (2008), in Croatian FR constructions, the wh-phrase obligatorily reconstructs into the FR-internal position, as shown by (17), where the R-expression contained in the wh-phrase cannot be co-referential with a pronoun contained within the FR.

- (17) \**Vid poštuje kojeg god igrača Slavena Bilića<sub>i</sub>*  
 Vid.NOM respects which.ACC ever player.ACC Slaven.GEN Bilić.GEN<sub>i</sub>  
*on<sub>i</sub> hvali.*  
 he.NOM<sub>i</sub> praises  
 ‘Vid respects whichever player of Slaven Bilić<sub>i</sub> he<sub>i</sub> praises.’

The same reconstruction effect is illustrated by the distribution of possessive anaphor *svoj* ‘self’s’ on the one hand and the possessive pronouns on the other. While *svoj* must be bound by a local subject, a possessive pronoun cannot be co-referential with a local antecedent. In FRs, if the wh-phrase contains a possessive anaphor, as in (18), the anaphor is obligatorily bound by the subject of the FR, and not by the subject of the matrix clause.

- (18) *Hana<sub>i</sub> poštuje kojeg god svog<sub>j/j\*</sub>i prijatelja Miriam<sub>j</sub>*  
 Hana.NOM<sub>i</sub> respects which.ACC ever self’s<sub>j/j\*</sub>i friend.ACC Miriam.NOM<sub>j</sub>  
*dovede.*  
 brings  
 ‘Hana<sub>i</sub> respects whichever of her<sub>j/j\*</sub>i friends Miriam<sub>j</sub> brings.’

On the other hand, if the wh-phrase contains a possessive pronoun, as in (19), this pronoun may not co-refer with the embedded subject, but only with the matrix one.

- (19) *Hana<sub>i</sub> poštuje kojeg god njezinog<sub>i/k/\*j</sub> prijatelja Miriam<sub>j</sub>*  
 Hana.NOM<sub>i</sub> respects which.ACC ever her<sub>i/j/\*j</sub> friend.ACC Miriam.NOM<sub>j</sub>  
*dovede.*  
 brings  
 ‘Hana<sub>i</sub> respects whichever of her<sub>i/k/\*j</sub> friends Miriam<sub>j</sub> brings.’

The data in (17) through (19) show that the derivation of FRs in Croatian involves movement of the wh-phrase. However, when the relativized element in a FR is an oblique object, we observe a different pattern. In contrast with (17), the FR in (20) below does not show Condition C effects: the R-expression contained within the

wh-phrase may co-refer with the pronoun inside the FR. This suggests that the relativized oblique object does not undergo movement.

- (20) *Marko je razočaran kojom god se odlukom*  
 Marko.NOM is disappointed which.INSTR ever REFL decision.INSTR  
*Slavena Bilića<sub>i</sub> on<sub>i</sub> ponosi.*  
 Slaven.GEN Bilić.GEN<sub>i</sub> he.NOM<sub>i</sub> prides  
 ‘Marko is disappointed by whichever decision of Slaven Bilić<sub>i</sub> he<sub>i</sub> is proud of.’

- (21) *Marko se sjeća kojeg god se igrača*  
 Marko.NOM REFL recalls which.GEN ever REFL player.GEN  
*Slavena Bilića<sub>i</sub> on<sub>i</sub> sramio.*  
 Slaven.GEN Bilić.GEN<sub>i</sub> he.NOM<sub>i</sub> was.ashamed  
 ‘Marko recalls whichever player of Slaven Bilić<sub>i</sub> he<sub>i</sub> was ashamed of.’

The distribution of the possessive anaphors in FRs with relativized oblique objects points to the same conclusion. The oblique wh-phrase cannot contain the possessive anaphor *svoj* ‘self’s’, as shown in (22). If such a wh-phrase does not move from the FR-internal position, this is expected. The impossibility of reconstruction (brought about by the absence of movement) rules out the embedded subject as a possible binder for the anaphor, and the fact that the wh-phrase is part of the embedded clause, and not of the matrix clause makes the matrix subject too distant to be able to bind the anaphor.<sup>8</sup>

- (22) \**Hana<sub>i</sub> se sjeća kojeg god se svog<sub>j/i</sub> članka*  
 Hana.NOM<sub>i</sub> REFL recalls which.GEN ever REFL self’s<sub>j/i</sub> article.GEN  
*Miriam<sub>j</sub> srami.*  
 Miriam.NOM<sub>j</sub> is.ashamed  
 ‘Hana<sub>i</sub> recalls whichever of her<sub>j/i</sub> articles Miriam<sub>j</sub> is ashamed of.’

- (23) \**Marko<sub>i</sub> je razočaran kojom god se svojom<sub>i/j</sub>*  
 Marko.NOM is disappointed which.INSTR ever REFL self’s<sub>i/j</sub>  
*odlukom Slaven<sub>j</sub> ponosi.*  
 decision.INSTR Slaven.NOM prides  
 ‘Marko is disappointed by whichever decision of Slaven Bilić<sub>i</sub> he<sub>i</sub> is proud of.’

<sup>8</sup> See Gračanin-Yuksek (2008) for arguments that the wh-phrase in Croatian FRs occupies a RC-internal position.

Finally, the distribution of possessive pronouns in FRs that involve relativization of an oblique object also indicates that such FRs are not derived by movement. A possessive pronoun contained within the *wh*-phrase may co-refer with both the matrix and embedded subjects, as shown in (24).

- (24) *Hana<sub>i</sub> se sjeća kojeg god se njezinog<sub>i/j/k</sub> članka*  
 Hana.NOM<sub>i</sub> REFL recalls which.GEN ever REFL her<sub>i/j/k</sub> article.GEN  
*Miriam<sub>j</sub> srami.*  
 Miriam.NOM<sub>j</sub> is.ashamed  
 ‘Hana<sub>i</sub> recalls whichever of her<sub>i/j/k</sub> articles Miriam<sub>j</sub> is ashamed of.’

- (25) *Hana<sub>i</sub> je razočarana kojim god se njezinim<sub>i/j/k</sub>*  
 Hana.NOM<sub>i</sub> is disappointed which.INSTR ever REFL her<sub>i/j/k</sub>  
*prijateljem Miriam<sub>j</sub> ponosi.*  
 friend.ACC Miriam.NOM<sub>j</sub> prides  
 ‘Hana<sub>i</sub> is disappointed by whichever of her<sub>i/j/k</sub> friends Miriam<sub>j</sub> is proud of.’

If the data above are correct, we observe a striking parallelism between the behavior displayed by Croatian FRs and *što*-RCs: an oblique object can be relativized in both, but the derivation of neither construction involves movement. In FRs, the absence of movement is indicated by the absence of reconstruction effects, evidenced by the binding possibilities which contrast with those available for cases where the relativized element bears a structural case.<sup>9</sup> In *što*-RCs, it is indicated by the obligatory presence of an RP (even when MCM holds). If an oblique object for whatever reason cannot undergo movement under relativization, as indicated by the binding patterns observed in FRs, then it is not surprising that when the relativized element in a *što*-RC is an oblique object, the presence of an RP is obligatory, indicating a non-movement strategy.<sup>10</sup>

<sup>9</sup> As pointed out by an anonymous reviewer, this predicts that relativization out of an island is possible with FRs that involve an oblique case-marked *wh*-phrase, while it is impossible with FRs whose *wh*-phrase bears a structural case. This, however, is not what we find; FRs are generally impossible when relativization proceeds out of an island. At present I have no explanation for why the formation of FRs is disallowed when the relativized oblique element originates within an island. However, I suspect that the solution to this puzzle probably depends on the exact analysis of FRs introduced by an oblique *wh*-phrase. In particular, what seems to be important is the nature of the element that receives a theta-role from the embedded predicate and the nature of the relationship that holds between that element and the *wh*-phrase that introduces the FR. I leave this issue for further research.

<sup>10</sup> It is not clear whether the claim that oblique-marked constituents cannot undergo movement under relativization holds for *wh*-RCs. The oblique *wh*-phrase in (i) and (ii) occupies [Spec CP] of the relative clause, which suggests that it has undergone movement from the site of relativiza-

We might wonder whether the RP in *što*-RCs in (15) and (16) is obligatory because an oblique case cannot participate in case matching, i.e. cannot satisfy the MCM requirement. If it were so, then the presence of an RP would be expected, since the movement strategy, which is subject to MCM, would not be available. The example in (26) below shows that an oblique case may in principle satisfy MCM. In (26), where the head of the RC bears genitive and the relativized object is accusative, the obligatory RP requirement is lifted, indicating that the movement strategy is available. Since movement is only allowed under MCM, this requirement must be met in (26). This is indeed so, due to the genitive/accusative syncretism that holds for the noun *profesor* ‘professor’ (the form is *profesora* both in genitive and in accusative).

- (26) *Sjećam*<sub>+gen</sub> *se* *profesora* *što (ga)* *svi*  
 recall.1SG.<sub>+gen</sub> REFL professor.GEN/ACC that (him.ACC) everybody  
*pamte*<sub>+acc</sub>  
 remember.<sub>+acc</sub>  
 ‘I recall the professor that everyone remembers.’

The reverse case pattern, however, yields the RP obligatory, despite the fact that MCM is satisfied. This is because movement is precluded by more general inertness of oblique objects under relativization.

- (27) *Pamtim*<sub>+acc</sub> *profesora* *što \*(ga)* *se* *svi*  
 remember.1SG.<sub>+acc</sub> professor.ACC/GEN that (him.GEN) REFL everybody  
*sjećaju*<sub>+gen</sub>  
 recall.<sub>+gen</sub>  
 ‘I remember the professor that everyone recalls.’

The parallel behavior of FRs and *što*-RCs with respect to relativization of oblique-marked elements is an indication that in neither case does the relativized element undergo movement. In particular, in *što*-RCs this is indicated by an

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tion, but given general lack of reconstruction effects in Croatian *wh*-RCs, it is still possible that in these cases the *wh*-phrase is externally merged in the surface position, on a par with FRs in (20) through (25).

- (i) *Sjećam*<sub>gen</sub> *se* *psa* [*kojeg* *si* *se* *bojao*<sub>gen</sub> \_\_\_]  
 recall.1SG.<sub>gen</sub> REFL dog.GEN [which.GEN Aux.2SG REFL feared<sub>gen</sub> \_\_\_]  
 ‘I recall the dog which you used to fear.’
- (ii) *Razočaran*<sub>instr</sub> *sam* *studentom* [*kojim* *se* *ponosiš*<sub>instr</sub> \_\_\_]  
 disappointed<sub>instr</sub> am student.INSTR [which.INSTR REFL pride<sub>instr</sub> \_\_\_]  
 ‘I am disappointed by the student which you are proud of.’

obligatory presence of an RP. This provides support for the claim that *što*-RCs without an RP are derived through a movement strategy, unlike the *što*-RCs in which an RP is present.

### 3.3 Quirky subjects

Additional support for the claim that *što*-RCs with and without an RP do not share the same internal syntax comes from subject *što*-RCs which contain a quirky subject. Recall from (2) above that a subject *što*-RC parallels a (subject) *wh*-RC in that both require the site of relativization to be a gap. Given the discussion so far, this would mean that subject *što*-RCs are always derived by movement.<sup>11</sup> However, when the subject of a *što*-RC bears quirky case, as is the case in existential constructions where the subject is genitive, an RP is obligatory, regardless of MCM. This is shown in (28). This again lends support to the claim that oblique elements cannot undergo movement when relativized.

- (28) *Najeo*<sub>+gen</sub> *se* *sladoleda* [*što* \*(*ga*) *je* *bito*<sub>+gen</sub> *na*  
 eaten<sub>+gen</sub> REFL ice-cream.GEN [that \*(it.GEN) Aux.3SG been<sub>+gen</sub> on  
*stolu.*]  
 table]  
 ‘He has eaten to the fullest the ice-cream that there was on the table.’

To summarize, the data discussed in this section show that whenever movement, which leaves a gap, is (for whatever reason) unavailable in a *što*-RC, the site of relativization must be occupied by an RP. Put differently, an RP may be omitted from a *što*-RC only in those configurations where movement is available. This argues for the claim that *što*-RCs that do not contain an RP are derived by movement, while the ones that do are derived by a non-movement strategy.

## 4 Analysis of RCs or Why movement is subject to MCM

If the proposal so far is on the right track, we are now facing the following question: Why does the relativized element in a *što*-RC move *only if the MCM require-*

<sup>11</sup> Movement in subject *što*-RCs is exempt from the matching requirement that holds for object *što*-RCs. I discuss this issue in section 4.1.

*ment is satisfied?* Put differently: Why does MCM hold in *što*-RCs that involve movement (but it does not hold in *wh*-RCs, which also involve movement)? I argue that this is a consequence of the requirement, which seems to hold in Croatian, that the case feature assigned to a constituent by an overt case-assigner other than  $T^0$  be *overtly* realized.<sup>12</sup> This is a modified version of the Inverse Case Filter (Bošković 1997, 2002; Martin 1999), which is originally formulated as “the requirement that traditional case assigners assign their case features” (Bošković 2002: 170). In the case of a *što*-RC, the modified Inverse Case Filter ensures that the case which  $v^0$  of the relative clause has to assign is morphologically realized.

If the RC contains an RP, the case-feature assigned by  $v^0$  is overtly realized by the RP. The derivation of such RCs proceeds as follows. The RP is merged in the site of relativization and receives case from  $v^0$ . As the derivation proceeds, a null operator is merged in [Spec CP] of the RC, from where it binds the RP, thus mediating the relationship between the head of the RC and the RP. In order for the derivation to converge, the operator merged in [Spec CP] position must be capable of binding the RP. Merchant (2004) argues that such operators must be caseless. Since overt *wh*-operators in Croatian are marked for case, the only option is to merge a null operator. The complete RC is then adjoined to the head noun.<sup>13</sup> In a *wh*-RC, on the other hand, it is the *wh*-operator that spells-out the case features of the embedded predicate, thus satisfying the Inverse Case Filter requirement.

What about *što*-RCs that do not contain an RP? We have seen above that such RCs are well-formed in exactly those cases where the head noun morphologically matches the case that the embedded  $v^0$  has to assign. I propose that in such instances, the “carrier” of the case features in question is the head of the relative clause. Our next task is to identify the mechanism that makes it possible for the head of a *što*-RC to overtly realize case features assigned by the embedded  $v^0$ . The seemingly simplest solution that would make this possible is to say that Croatian *što*-RCs involve a raising analysis (Áfarli 1994; Bhatt 2002; Bianchi 1999; Brame 1968; De Vries 2002; Hornstein 2000; Kayne 1994; Safir 1999; Schachter 1973; Vergnaud 1974; Zwart 2000), on which the external head of the RC originates inside the RC, and subsequently raises out of it. However, this analysis makes a

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<sup>12</sup> If the case-assigner is itself phonologically non-realized, as in VP-deletion, then the constituent bearing the assigned case feature need not be overt either. A caveat is in order here. Since  $v^0$ , which assigns accusative case, does not have a phonological reflex of its own, I assume that it counts as overt iff the verb is overt.

<sup>13</sup> No comparison of competing derivations is involved here. As soon as the RP is merged, the movement strategy is ruled out (Frampton and Guttman 2002).

prediction that the head of the *što*-RC should be able to reconstruct into its original position. This is in fact not the case, as shown by the data in (29)–(31).<sup>14</sup> In (29), the possessive anaphor contained in the head of the *što*-RC cannot be bound by the embedded subject (cf. the FR in (18) above).

- (29) *Jan<sub>i</sub> voli<sub>+acc</sub> svakog svog<sub>i/\*j</sub> psa što (ga) je*  
*Jan<sub>i</sub> loves<sub>+acc</sub> every.ACC self's.ACC<sub>i/\*j</sub> dog.ACC that (him.ACC) Aux.3SG*  
*Iva<sub>j</sub> dovela<sub>+acc</sub> \_\_ na izložbu.*  
*Iva<sub>j</sub> brought<sub>+acc</sub> \_\_ on exhibition*  
 ‘Jan<sub>i</sub> loves every one of his<sub>i</sub> dogs that Iva brought to the exhibition.’  
 \*‘Jan loves every one of her<sub>i</sub> dogs that Iva<sub>i</sub> brought to the exhibition.’

In (30) below, the absence of the reconstruction is illustrated by the fact that the possessive pronoun contained within the head of the relative clause may corefer with an element in the embedded clause, but not with an element of the matrix clause.

- (30) *Jan<sub>i</sub> voli<sub>+acc</sub> svakog njegovog<sub>j/k/\*i</sub> psa što (ga) je*  
*Jan<sub>i</sub> loves<sub>+acc</sub> every.ACC his.ACC<sub>j/k/\*i</sub> dog.ACC that (him.ACC) Aux.3SG*  
*Vid<sub>j</sub> doveo<sub>+acc</sub> \_\_ na izložbu.*  
*Vid<sub>j</sub> brought<sub>+acc</sub> \_\_ on exhibition*  
 ‘Jan<sub>i</sub> loves every one of his<sub>j/k/\*i</sub> dogs that Vid<sub>j</sub> brought to the exhibition.’

Finally, *što*-RCs do not exhibit a Condition C effect. The name in the head of the relative clause in (31) may corefer with the pronoun in the relative clause.

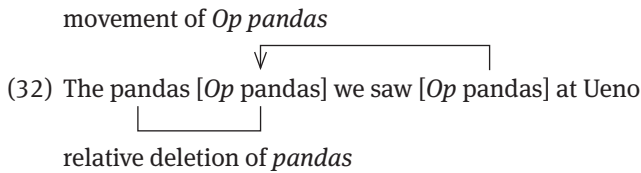
- (31) *Jan poštuje<sub>+acc</sub> one Vidove<sub>i</sub> odluke što (ih) on<sub>j</sub>*  
*Jan respects<sub>+acc</sub> those.ACC Vid's.ACC<sub>i</sub> decisions.ACC that (them.ACC) he<sub>j</sub>*  
*provodi<sub>+acc</sub> \_\_*  
*enforces<sub>+acc</sub> \_\_*  
 ‘Jan respects those of Vid's<sub>i</sub> decisions that he<sub>j</sub> enforces.’

The absence of reconstruction effects in *što*-RCs thus argues against the raising analysis. Instead, the data seem to point to some version of the matching

<sup>14</sup> In Croatian, reconstruction effects are absent from *što*-RCs regardless of the presence or the absence of an RP. Croatian *što*-RCs thus contrast with the *deto*-relatives in Bulgarian in which reconstruction effects are observed in gap-relatives, but not in *deto*-RCs that feature an RP (Krapova 2010).



analysis.<sup>15</sup> I adopt the view that RCs contain both an external head – to which the RC is adjoined – and an internal one – originally merged in the position of the relativization (Bhatt 2002; Hulsey and Sauerland 2006; Sauerland 2002). The internal head moves to [Spec CP] of the RC, where it is obligatorily deleted under identity with the external head (by a process that Sauerland (2002) calls *relative deletion*). This is illustrated in (32), taken from Sauerland (2002: ex. [2b]).



By rejecting the raising analysis for Croatian *što*-RCs, we have lost an obvious way in which the head of the relative clause could have been argued to overtly realize the case assigned by the RC-internal  $v^0$ . At the same time, by adopting the matching analysis in (32), we have committed ourselves to the view that the internal head, which is case-marked by the embedded  $v^0$ , is ultimately deleted by relative deletion, in violation of the Inverse Case Filter I adopted above. Given this state of affairs, we need to assume some kind of mechanism that allows for the case features of the internal head to percolate to the external head of the RC. In other words, we need to assume that the phenomenon we are observing in Croatian *što*-RCs is the phenomenon of *inverse (Case) attraction*.

Inverse attraction, by which the head of the relative clause appears with the case morphology of the relative pronoun, is attested in a number of languages: Old English (Harbert 1983), Latin, Old and Middle High German (Grimm 1866; Pittner 1995), German (Bader and Bayer 2006), Ancient Greek (Grimm 2007), Dari (Houston 1974). Inverse attraction is illustrated in (33), originally from Grimm (1866), as cited in Bader and Bayer (2006) (their examples [8a] and [8b]).<sup>16</sup>

<sup>15</sup> As a reviewer points out, the matching analysis is not incompatible with reconstruction within relative clauses (Salzmann 2006). The issue here, however, is not the compatibility of the matching analysis with the presence of reconstruction, but rather the incompatibility of the raising analysis with the general absence of reconstruction effects, which Croatian displays.

<sup>16</sup> Bader and Bayer translate (33b) as ‘a coat which he wore was richly embroidered.’ Following the suggestion of a reviewer, I changed the translation so as to reflect the fact that the example involves left dislocation.

- (33) a. *sed istum quem quaeris ego sum*  
 but this.ACC who.ACC look.2SG I am  
 ‘but the one you are looking for is me’ *Latin*
- b. *einen mantel den er an truoc der was gezieret*  
 a coat.ACC which.ACC he at wore this.NOM was decorated  
*genuoc*  
 enough  
 ‘a coat which he wore that was richly embroidered’ *Middle High German*

Inverse attraction phenomena have been taken as evidence for the raising analysis of RCs by Bianchi (2000) and Cinque (2010) among others. However, we have seen that Croatian object *što*-RCs do not display reconstruction effects with respect to binding possibilities. The piece of data below shows that such RCs also do not allow for the idiom reading when the head of the RC is part of the idiom:

- (34) *Glavu što (je) danima treba razbijati da bi se*  
 head.ACC that (it.ACC) days.INST needs break.INF that would REFL  
*došlo do rješenja ne poštujem.*  
 come to solution not respect.1SG  
 ‘I don’t respect the head that needs to be broken for days in order to reach a solution.’  
 #‘I don’t respect the mind that needs to be jogged for days in order to reach a solution.’

If I am correct in proposing that Croatian object *što*-RCs indeed involve the phenomenon of inverse attraction, then inverse attraction must be independent of the raising analysis of RCs. Harbert (1983) and Testa-Avila (2006) argue for a marked mechanism that transmits the case of the relative pronoun to the external head of the RC. Studying Case attraction phenomena in German, Bader and Bayer (2006) argue that they are a consequence of “feature sharing between ‘head NP’ and the relative operator.” (pg. 130) They propose that the two elements (the head NP and the relative operator) share features for number and person, and that Case attraction effects arise because sharing is erroneously extended to Case features.<sup>17</sup>

<sup>17</sup> Bader and Bayer argue that the morphology of more marked cases is an exponent of the additional structural layer, Kase Phrase (KP), that is absent from structurally marked DPs, but is present in DPs case-marked for a lexical (inherent) case. Case attraction phenomena then arise due to the copying of the KP shell from the relative pronoun onto the head of the RC.

In the rest of the paper, I assume (together with the above authors) that inverse attraction involves an operation in which the case features of the internal head are copied onto the external head.<sup>18</sup> Thus, the derivation of a *što*-RC in Croatian that does not contain an RP involves the following steps:

(35) Derivation of an RP-less *što*-RC:

- i. The RC is built with the internal head occupying the site of relativization, where it is case-marked,
- ii. The internal head raises to [Spec CP] of the RC,
- iii. When the external head is merged, the case features of the internal head are transmitted/copied onto the external head,
- iv. The internal head is deleted by relative deletion.

In the absence of an RP, copying of the internal head's case features onto the external head is always required as a Last Resort operation, since otherwise no overt element is spelling out the case assigned by the embedded predicate. The derivation converges only when the form of the external head matches the form required by both embedded and matrix predicates. Thus, the derivation that involves movement only converges under MCM. This explains why movement in Croatian *što*-RCs is subject to MCM.

If the embedded predicate requires the morphological form of the external head of RC to be different from the form required by the matrix predicate, the derivation crashes since nothing can spell out the case features that the embedded verb assigns. This is why it is impossible to derive by movement RCs like those in (36)–(38), where the matrix predicate requires the head of the RC to bear morphology different from what is required by the embedded predicate. Consequently, the presence of an RP, which indicates a non-movement strategy, is obligatory.

(36) *Poštujem*<sub>+acc</sub> *advokata* *što* *si* *\*(mu)* *dao*<sub>+dat</sub> *slučaj*.  
 respect.1SG<sub>+acc</sub> lawyer.ACC that Aux.2SG *\*(he.DAT)* given<sub>+dat</sub> case.ACC  
 'I respect the lawyer that you gave the case to.'

(37) *Ovo je*<sub>+nom</sub> *učitelj* *što* *\*(mu)* *je* *Jan* *zahvalan*<sub>+dat</sub>.  
 this is<sub>+nom</sub> teacher.NOM that *\*(he.DAT)* is Jan grateful<sub>+dat</sub>.  
 'This is the teacher that Jan is grateful to.'

<sup>18</sup> The details of this process remain mysterious. I leave this issue for further research.



features assigned/checked by the embedded case-assigner are not spelled out on an overt element, in violation of the Inverse Case Filter. The same is true of (39b), where MCM does not hold, i.e. the external head *čovjeka* ‘man’, appearing in a morphological form different from the one it would have were it case-marked by the RC-internal verb *puši* ‘smokes’ (which would be *čovjek*), cannot spell-out the case features assigned by the embedded verb. However, both examples are well-formed. This puzzle is explained if the Inverse Case Filter does not require that features assigned by  $T^0$  be overtly realized. This is consistent with the fact that Croatian is a subject-drop, but not an object-drop language. Thus, while the movement strategy in non-subject *što*-RCs is constrained by MCM, this requirement is lifted when the relativized element is the subject, due to the fact that Inverse Case Filter does not hold for  $T^0$ .

## 4.2 A note on relativized objects of prepositions

The analysis I argue for also makes a prediction that *što*-RCs in which the relativized element is the object of a preposition must contain an RP even under MCM. This prediction is borne out, as shown in (42).

- (42) *Vid vozi prema kući što Jan \*(u njoj) živi.*  
 Vid.NOM drives towards house.LOC that Jan.NOM \*(in her.LOC) lives  
 ‘Vid is driving towards the house that Jan lives in.’

The obligatory presence of an RP in (42) can be made to follow from the analysis by appealing to the general impossibility of oblique constituents to undergo movement under relativization (see Section 3.2). However, while this explanation suffices to account for the obligatory appearance of the RP in (42), it does not generalize to cases where the preposition assigns accusative case to its object. We have seen that constituents bearing accusative freely undergo movement when they are relativized (both in FRs and in *što*-RCs). Yet, the RP in (43) below is obligatory.

- (43) *Vid zna za organizaciju što Jan \*(za nju) radi.*  
 Vid.NOM knows for organization.ACC that Jan.NOM \*(for her.ACC) works  
 ‘Vid knows of the organization that Jan works for.’

The reason why this is so is the fact that Croatian is not a preposition stranding language. Therefore, on the movement analysis, if the accusative-marked internal head *organizaciju* ‘organization’ moved to [Spec CP] of the RC, it would have

to pied-pipe the preposition *za* ‘for’ with it. However, as noted by Harbert (1982), pied-piped prepositions invariably block case attraction. Thus, on the movement analysis of the RC in (43), the case features assigned by the preposition are overtly realized neither by the internal nor by the external head. The derivation crashes due to the violation of the Inverse Case Filter.<sup>19</sup>

## 5 Conclusion

In this paper I have argued that *što*-RCs with and without an RP do not share the same syntax. We started by observing that *što*-RCs, as opposed to *wh*-RCs, require an RP to appear in the RC in cases where the relativized element is not the subject. We then observed that this requirement is relaxed in cases where the morphological form of the head of the RC (determined within the matrix clause) matches the form required by the RC-internal predicate. I called this requirement Morphological Case Matching (MCM). I proposed that the absence of an RP in a *što*-RC indicates that the RC is derived through movement, and we have seen evidence from island effects, oblique objects, and quirky subjects that supports this claim. If RP-less *što*-RCs are indeed derived by movement, then we faced the question of why the movement strategy in the derivation of *što*-RCs is available only under MCM. I proposed that this is due to the modified version of the Inverse Case Filter (Bošković 1997, 2002; Martin 1999), which requires that the case feature assigned to a constituent by an overt case-assigner other than T<sup>0</sup> be *overtly* realized. When an RP is present in the *što*-RC, the Inverse Case Filter is satisfied because the RP spells out the case features assigned by the embedded predicate. However, in the absence of an RP, the only overt element that spells out the case features of the embedded case assigner is the head of the RC. In order to account for this fact, we entertained the possibility that Croatian *što*-RCs involve a raising analysis (Áfarli 1994; Bhatt 2002; Brame 1968; Hornstein 2000; Safir 1999; Schachter 1973; Vergnaud 1974), according to which the head of the RC is externally merged in the site of relativization and subsequently moves to its surface position, which is external to the RC. However, we have seen that the absence of reconstruction effects in

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**19** In English *that*-RCs, the relativized object of a preposition obligatorily strands the preposition, as shown by the contrast in (i). This might indicate that inverse attraction is involved in the derivation of *that*-RCs in English as well, i.e. that (ib) is ill-formed due to the impossibility of the features of the internal head to be copied onto the external head because of the intervening preposition.

- (i) a. John is driving towards the house that Peter lives in.  
 b. \*John is driving towards the house in that Peter lives.

Croatian *što*-RCs argues against this analysis. Instead, I adopted the matching analysis as the correct account of Croatian RP-less *što*-RCs, and proposed that the RP in such RCs is absent because the *internal* head moves to the [Spec CP] position of the RC, where it is deleted by the process of Relative deletion under the identity with the external head. I proposed to explain the fact that this derivation is allowed only under the MCM by assuming, following Harbert (1983), that the internal head's case features are copied onto the external head giving rise to inverse attraction effects. The copying of the case features from the internal head onto the external head is seen as a Last Resort operation in order to save the sentence from violating the Inverse Case Filter. The derivation converges only if the external head appears in the morphological form which can serve as a carrier of the case features required by the embedded predicate. This explains why a *što*-RC may be derived through movement only if the MCM is satisfied.

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